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(54) Bridgeless tungsten halogen lamp.

(57) A single-ended, tungsten halogen lamp having a tubular hard glass envelope containing an inert gas and a halogen, preferably bromine, therein. An improved bridgeless support structure is provided in which a wire support is attached to one end of a pair of filament coils. The wire support extends in two directions from the point of attachment and includes two extension portions which are each secured in the press-sealed base portion of the envelope to provide a fixed filament support with improved shock resistant capabilities and with reduced possibility of contamination due to elimination of the bridge element. A method of making the lamp is also described.

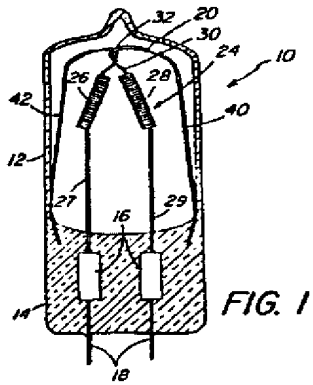

FIG. 1

EP 0 173 995 A2

Croydon Printing Company Ltd

BRIDGELESS TUNGSTEN HALOGEN LAMP

DESCRIPTION

TECHNICAL FIELD

The present invention relates in general to incandescent lamps of the tungsten halogen type and more particularly to an improvement in the filament support structure of such lamps.

BACKGROUND

In conventional tungsten halogen lamps, the parameters of the mount assembly are the limiting factor dictating the lamp dimensions which in turn control the performance characteristics of the lamp. Such characteristics include coil temperature, wattage and light distribution.

One example of a mounting structure for use in conventional tungsten halogen lamps is described in Oetken et al., U.S. Patent 4,415,833. A more sophisticated mounting structure is shown in U.S. Patent 4,450,381 to Kendrick et al. Typically, such lamps employ an insulative bridge (quartz or glass) usually located below the filament structure in which the lamp filament leads are embedded. The bridge secures the filament leads thereby supporting the filaments. In addition, the bridge serves to define the mount dimensions.

Most lamps of this variety are of "single-ended" construction, in that only one end of the lamp is press-sealed about the lead-in filament wires and additional structure, if any (e.g., molybdenum foil elements). The remaining, opposed end is typically sealed using a known tipping operation.

Various bridge structures are shown in the following patents:

U.S. 3,629,642 (Demas)
U.S. 3,736,456 (Middlehoek et al)
U.S. 3,764,845 (DeFraeye)
U.S. 3,780,333 (Flynn)

The bridge understandably adds to the cost of the lamp structure, in addition to being a potential source of contamination. The added cost results from the labor and material required to produce the bridge assembly and effect location of the filament structure therein. The contamination is attributed to moisture or other impurities entrapped in the bridge which is driven out under the high temperatures encountered during lamp operation.

DISCLOSURE OF THE INVENTION

In accordance with the invention, the lamp filament structure is improved by eliminating the typical glass or quartz bridge. In place thereof, a wire support is provided which is attached to one end of the filament coil(s). The wire support extends in two directions from the point of attachment. Each extension has sufficient length and flexibility to extend beyond the internal dimensions of the lamp envelope. Therefore, when initially assembled in such envelope, the supports extensions must be compressed and the lamp envelope slid over the compressed wire support attached to the filament, or vice versa.

Once assembled in the lamp envelope, the lamp filament support structure maintains its assembled position within the envelope through friction between the interior wall of the envelope and the compressed wire. The lower portion of the

lamp envelope is then press-sealed such that the ends of the wire support extensions, as well as the filament support leads, are embedded (e.g., simultaneously, using known pressing equipment) in the pressed portion of the lamp envelope. This results in a fixed filament support and an improved shock-resistant lamp structure with lessened possibility for contamination.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevation view, partly in section, of a tungsten halogen lamp according to a preferred embodiment of the present invention;

FIG. 2 is a partial sectional view of the embodiment of FIG. 1, on a slightly enlarged scaled, in a partially disassembled state showing the procedure for inserting the support structure into the lamp envelope;

FIG. 3 is a front elevation view, partly in section, of a tungsten halogen lamp according to an alternate embodiment of the invention;

FIG. 4 is a front elevation view, partly in section, of a further embodiment of the invention;

FIG. 5 is a front elevation view, partly in section, of a tungsten halogen lamp according to yet another embodiment of the invention; and

FIG. 5A is a sectional view as taken along the lines A-A in FIG. 5 which for simplicity only shows the curved portions of the filament support wire.

BEST MODE FOR CARRYING OUT THE INVENTION

For a better understanding of the present invention together with other and further objects, advantages, and capabilities thereof, reference is made to the following disclosure and appended claims in connection with the above described drawings.

Before discussing the details of the improved filament support structure of this invention, a discussion follows of the main lamp components. In this regard, like reference characters have been used to identify like parts. Thus, all embodiments of the lamp 10 comprise a hermetically sealed, light-transmitting envelope 12 of generally tubular (cylindrical) shape with a conventional (press-sealed) base portion 14. A pair of molybdenum foil seals 16 disposed within the base serve to interconnect the input leads 18 to the filament body. A high melting point material, such as quartz, is typically used for envelope 12, although other hard glasses may also be employed. The hermetically sealed envelope 12 is usually filled with an inert gas, such as argon, nitrogen, krypton, or a mixture thereof, and a halogen additive such as iodine or bromine. In accordance with the present invention, the lamp envelope is preferably of the bromine fill type. The bromine fill may be provided in the form of a given mixture of hydrogen bromide.

Any one of a number of different types of filament bodies may be incorporated into the lamp. One basic type of filament body is described in connection with the invention.

FIG. 1 shows a tungsten filament 24 which is referred to in the art as a CC2V (coiled coil) filament including two individual tungsten filament coils 26 and 28. These coils 26 and 28 are secured to respective leads (legs) 27 and 29, respectively.

In the embodiment shown in FIG. 1, a filament support structure comprises a wire 20 attached to the filament coils 26 and 28 at the intersection 30 between the two coils. As shown, the filaments are held by forming a loop 32 on wire 20 with the intersecting portion 30 passing therethrough. The base of the loop thus holds the filaments at intersection 30. Wire 20 is formed of ductile material compatible with normal environment encountered in halogen lamp operation. Suitable materials include tungsten and molybdenum.

The wire support structure 20 extends in two directions by wire extensions 40 and 42 outwardly from loop portion 32. The termination of each extension 40 and 42 is, as illustrated, embedded within the pressed portion 14 of lamp envelope 12 along with the foil seals 16 and input leads 18 during the conventional press sealing operation.

FIG. 2 shows a preferred method of assembling the support structure (shown generally at 60) into an open end of a length of glass tubing which eventually forms the lamp envelope 12 prior to exhausting and sealing thereof. As seen in FIG. 2, the extensions 40 and 42 of wire support 20, when not in compression, extend beyond (and are thus spaced farther apart than) the inner periphery of the envelope. Accordingly, to insert the support structure 60 within the envelope, the extensions must be compressed in the direction shown (by the arrows) as the envelope is slid over the support structure 60. The resultant friction between the wire extensions 40 and 42 and the internal surfaces of the envelope walls enables the support structure to maintain a proper position such that the filaments 26 and 24 are suitably located for optimum lamp illumination. The aforedescribed insertion occurs to the extent that both the filament support structure and filament are located a predetermined distance within the glass tubing. By predetermined is meant a distance such that the subsequent

press-sealing of the tubing's open end will include encapsulation (containment) of the extreme ends of extensions 40 and 42 therein, in addition to the ends of the leads 27 and 29. Understandably, this four-point retention at this location assures positive securement of the filament in the desired position. The final step in this process involves tipping the opposing (upper in FIG. 2) end of the tubing using a tipping operation well known in the art.

Variations of the securing loop 32 shown in FIG. 1 are envisioned in accordance with the invention, with FIGS. 3-5 showing various embodiments of such loops. Each of these alternative embodiments comprises a lamp support structure 60 within a lamp envelope 12 having a pressed base portion 14 and having a pair of molybdenum foil seals 16 respectively affixed to filament leads 27 and 29, which in turn form part of or are connected to filament coils 26 and 28, respectively. In addition, both filament coils are interconnected by the described intersection portion 30.

Referring to FIG. 3, support wire 20' is similar to support wire 20 of FIG. 1 in that the filament is held or supported by the base of the loop 32'. However, the loop 32' in this embodiment is rotated 180° upwardly (towards the tubulated end of the lamp envelope) to allow the loop to extend into and thus be securedly retained within the tubulated dome portion 70 of the lamp envelope 12. This extension provides an additional point of filament support and therefore added shock or vibration resistance. Dome portion 70 is formed as a result of the aforementioned, known tipping procedure.

FIG. 4 shows an oval shaped loop structure with a lower portion 32" which holds the filaments at the intersection 30 but includes an upper portion 33 shaped to fit into tubulated device 33 for additional shock resistance. This embodiment thus combines both the advantageous features of the embodiments of FIGS. 1 and 2.

In FIGS. 5 and 5A, the loop 32 is substantially the same as that shown in FIGS. 1 and 2. However, the portions (80) of wire 20 adjacent the loop are formed into substantially semicircular (arcuate) shapes which each conform (and engage) to the inner peripheral surface of the lamp envelope (as shown more clearly in FIG. 5A). This enables more lamp envelope internal wall surface to be used for filament positioning and retention for shock resistance.

Comparative tests between the bridgeless mount construction shown in the embodiment of FIG. 1 with respect to prior art quartz bridge mount assemblies were conducted. The results showed that the quartz bridge lamp samples operated an average of about 808 hours before failing, whereas the bridgeless lamps operated for more than about 850 hours with no failures. In addition, many of the quartz bridge lamps exhibited excessive crystal growth, thereby indicating contamination. It is believed that this contamination was caused by the quartz bridge used in the lamp construction. On the other hand, the bridgeless samples, which were processed along with the bridged samples, indicated no such contamination.

Having described a limited number of embodiments of the present invention, it should now be apparent to those skilled in the art that numerous other embodiments are contemplated as falling within the scope of this invention. Accordingly, this invention should not be limited except as required by the scope of the following claims.

CLAIMS

WHAT IS CLAIMED IS:

1. A tungsten halogen lamp comprising:
an hermetically-sealed, light transmitting envelope;
an inert fill and halogen disposed within said envelope;
filament means including a pair of tungsten filaments interconnected together at one end thereof;
filament wires extending from the opposed, remaining ends of said filaments; and
a filament support wire forming a loop at the interconnection of said filaments to provide support for said filament means, said wire having extensions from said loop which are compressed within said lamp envelope to hold said filament support wire in a fixed position within the lamp to thereby locate and support said filament means within said envelope.

2. The lamp of Claim 1 wherein a portion of said lamp envelope is pressed at one end thereof to form a base for fixedly retaining both said filament wires and said extensions of said filament support wire therein.

3. The lamp of Claim 2 wherein said lamp envelope includes a tubulated dome portion, said loop extending within said dome portion.

4. The lamp of Claim 2 further including a pair of foil seals, each of said foil seals connecting individual external filament leads to a respective one of said tungsten filaments.

5. The lamp of Claim 2 wherein said filament support wire includes a portion extending into a recess in said lamp envelope.

6. The lamp of Claim 2 wherein said filament support wire includes a pair of arcuate portions shaped to conform to the inner periphery of said lamp envelope, said arcuate portions each engaging an internal surface of the walls of said envelope.

7. A method of making a tungsten halogen lamp having a glass envelope and a filament member therein, said method comprising:

providing a length of substantially cylindrical glass tubing having at least one open end;

providing a filament member including at least one coiled tungsten filament and an extending lead wire secured to or forming part of one of the end portions of said coiled tungsten filament;

positioning a filament support structure including a wire member having at least one loop therein on said filament member, said wire member further including a pair of extension portions which extend from said loop in substantially opposing directions such that portions thereof are spaced apart a greater distance than the internal diameter of said substantially cylindrical tubing;

inserting said filament member and said filament support structure a predetermined distance within said open end of said glass tubing to cause said extension portions of said support structure to compress and frictionally engage the internal surfaces of said tubing member;

providing a seal within said open end of said glass tubing, said seal including part of said lead wire and part of each of said extension portions of said filament support structure therein; and

providing a seal within the opposing end portion of said glass tubing to thereby define said glass envelope.

8. The method according to Claim 7 further including providing a dome portion within said opposing end portion of said glass tubing and thereafter positioning at least part of said loop of said filament support structure within said dome portion during said insertion of said filament member and said filament support structure.

9. The method according to Claim 7 wherein said sealing of said open end of said glass tubing is accomplished using a press-sealing operation.

10. The method according to Claim 7 wherein said sealing of said opposing end portion of said glass tubing is accomplished using a tipping operation.

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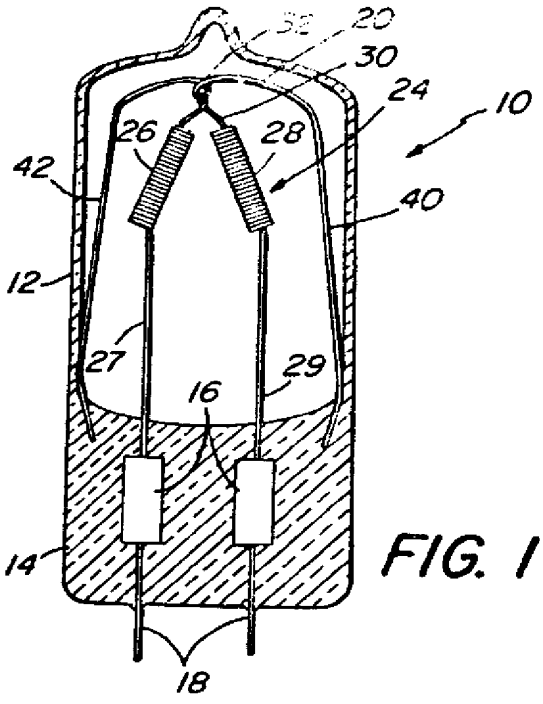

FIG. 1

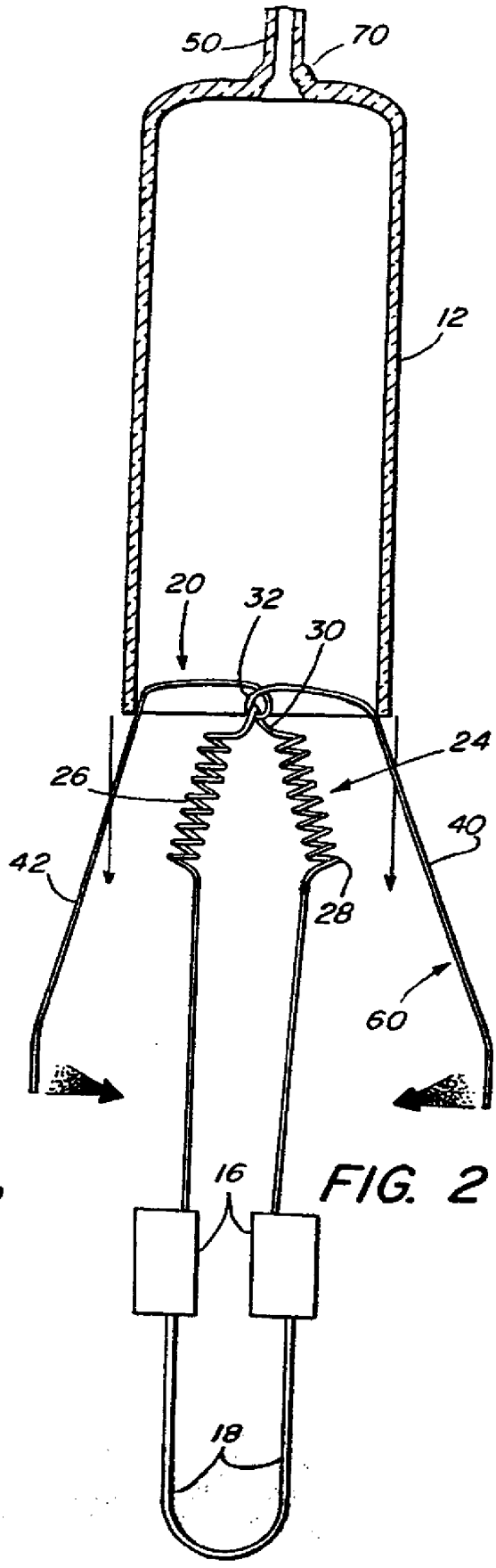

FIG. 2

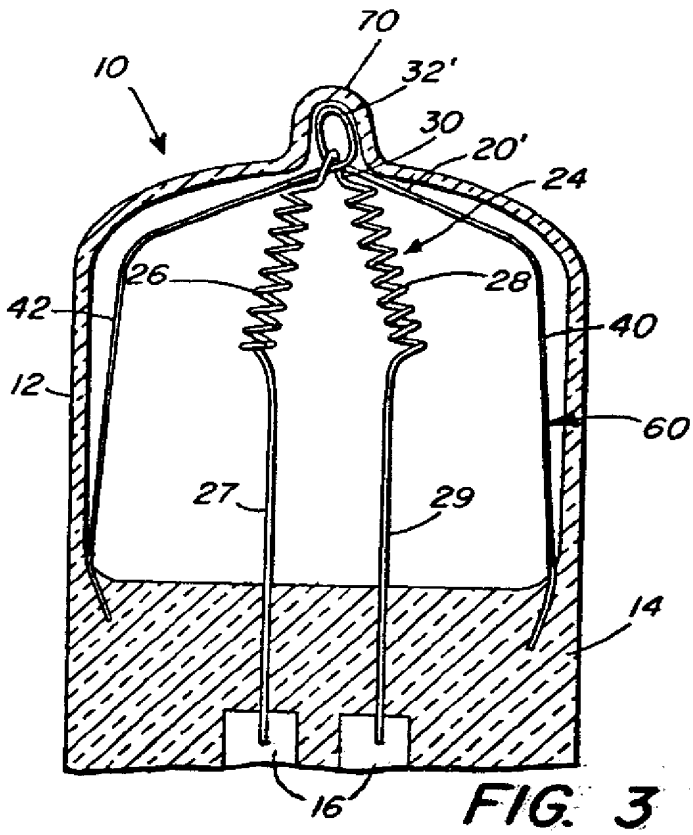

FIG. 3

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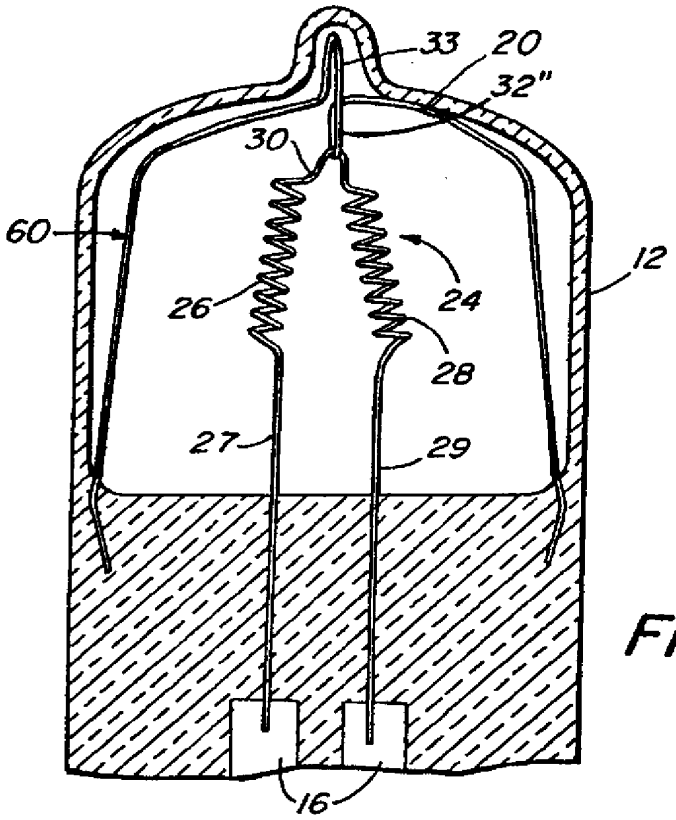

FIG. 4

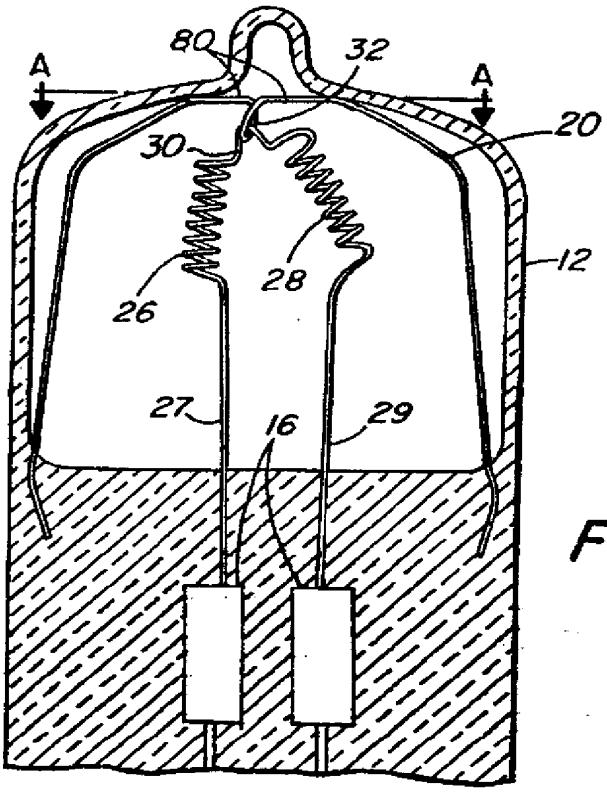

FIG. 5

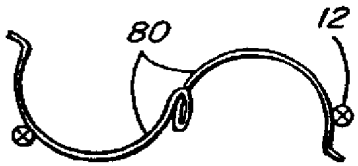

FIG. 5A

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(54) **Bridgeless tungsten halogen lamp.**

(57) A single-ended, tungsten halogen lamp having a tubular hard glass envelope containing an inert gas and a halogen, preferably bromine, therein. An improved bridgeless support structure is provided in which a wire support is attached to one end of a pair of filament coils. The wire support extends in two directions from the point of attachment and includes two extension portions which are each secured in the press-sealed base portion of the envelope to provide a fixed filament support with improved shock resistant capabilities and with reduced possibility of contamination due to elimination of the bridge element. A method of making the lamp is also described.

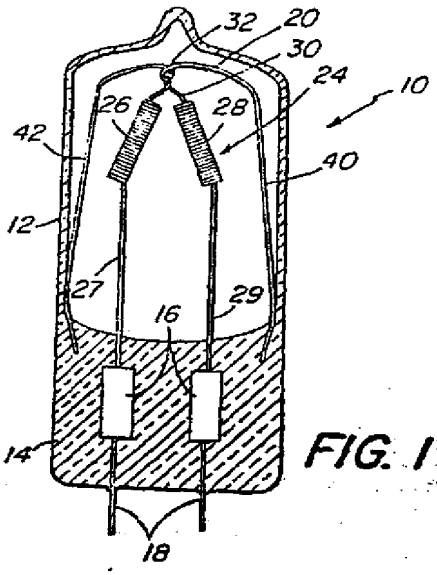

FIG. 1

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European Patent Office

EUROPEAN SEARCH REPORT

0173995

Application Number

EP 85 11 1055

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	FR-A-1 381 868 (COMPAGNIE DES LAMPES) * Page 2, right-hand column, lines 23-58; figure 4; page 2, left-hand column, lines 23-40; figures 1,2 *	1-10	H 01 K 1/18 H 01 K 3/06
A	US-A-3 403 280 (J.G. CARDWELL) * Whole document *	1-10	
A	US-A-4 208 608 (H.G. ANDERSON) * Whole document *	1,7	
A	FR-A-1 563 565 (WESTINGHOUSE) * Page 5, lines 5-11; claim 1; figures 1,4 *	1-10	
D,A	US-A-4 415 833 (J.E. OETKEN et al.)		

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

H 01 K 1/00
H 01 K 3/00

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	29-07-1988	ASSI

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
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P : intermediate document

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E : earlier patent document, but published on, or after the filing date
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Halogen incandescent lamp

The invention relates to a halogen incandescent lamp comprising a transparent sealed bulb, a gas filling comprising an inert gas and a halogen additive, a luminous element which is attached to a current supply system extending in a pinched portion of the bulb, and a mount extending from at least adjacent the outside of the pinched portion into the bulb and comprising at least one metal support wire which retains the luminous element in the vicinity of the end of the bulb remote from the pinched portion.

A lamp of this type is described in international patent application publication WO 02/075778. The length of the luminous element determines the power characteristics of the lamp, and in general it is desirable, therefore, to have the option to choose the length and (in relation therewith) the shape of the luminous element in dependence on the power of the lamp. The mount supporting the luminous filament of the known lamp consists of a bent metal support wire which is connected with electrical conduction to a central sealing foil, which in its turn is connected with electrical conduction to a center pin. The three interconnected parts (support wire, foil and center pin) are embedded in the pinched portion of the bulb, projecting at both sides thereof. The central portion of the luminous filament inside the bulb thus has a live electrical connection to the environment, which is unwanted in some applications, and can even be dangerous.

The object of the invention is to provide a reliable and efficient halogen incandescent lamp of the above-mentioned type, wherein the luminous filament in the bulb is supported in a stable manner by the metal support wire and/or wherein the luminous element can be arranged in many different shapes and lengths, and wherein there is no live connection from the luminous element to the environment, apart from the power supply system of the lamp.

In order to achieve the above objectives, the mount comprises a non-conducting part such that the outer end of the part of the mount at or adjacent the outside of the pinched portion and the support wire are electrically insulated from each other.

In a first preferred embodiment, the non-conducting part comprises a pedestal which is supported by the bulb or the pinched portion thereof, preferably at least partly extending into the pinched portion, and that the at least one metal support wire extends from the pedestal. In this manner it is possible to choose any number of support wires necessary for forming a luminous element of a required shape (for instance a V, U, or W shape, or even more complex three-dimensional shapes) or length. A compact lamp can thus be obtained having a sufficiently long luminous element.

Preferably, the pedestal comprises a rod or a capillary substantially extending in the pinched portion and a bead substantially extending inside the bulb. This renders it possible to insert the capillary part of the pedestal instead of the prior art center pin and feedthrough, while there is enough space in the extending bead for inserting a sufficient number of support wires in the required configuration, and changes to the currently used production methods are minimized. Preferably, the pedestal is substantially made of glass, preferably of the same kind as the bulb, for instance a hard glass or a quartz glass. If the bulb is made of quartz glass, more preferably, the glass is a quartz transition glass, which has good wetting and softening characteristics when the pedestal is heated for inserting the support wires and for embedding the pedestal in the pinched portion. In particular it is important that the thermo-mechanical properties of the pedestal, such as the coefficient of expansion, match those of the pinched portion. Preferably, the softening temperature of the pedestal is substantially lower than that of the pinched portion.

In a second preferred embodiment, the non-conducting part comprises a bead, preferably made of glass, more preferably made of a copper-based glass such as, for example, Corning™ batch 901ADY, which is applied to the outside of the pinched portion.

The invention also relates to a method of producing a lamp wherein the part of the mount which extends outside the pinched portion is substantially removed before the bead is applied to the outside of the pinched portion. The bead is preferably heated by IR radiation in order to apply the bead.

The invention will now be explained in more detail below with reference to the embodiments in the Figures. In the drawings:

Fig. 1a is a front elevation of a prior art halogen incandescent lamp;

Fig. 1b is a side elevation of the halogen incandescent lamp of Fig. 1a;

Fig. 2a is a front elevation of an alternative embodiment of a halogen incandescent lamp;

Fig. 2b is a side elevation of the halogen incandescent lamp of Fig. 2a;

Fig. 3 is a front elevation of a further alternative embodiment of a halogen incandescent lamp;

Fig. 4a is a front elevation of still a further alternative embodiment of a halogen incandescent lamp; and

Fig. 4b is a side elevation of the halogen incandescent lamp of Fig. 4a.

Figs. 1a and 1b are the front elevation and the side elevation of a halogen incandescent lamp 1 for general lighting purposes which is suitable for direct connection to line voltage, such as a 220 V mains. The halogen incandescent lamp 1 has a cylindrical bulb 2 made from quartz glass with an outer diameter of 12.75 mm and an overall length of approximately 45 mm. The inner space of the bulb 2 is filled in a known manner with an inert gas mixture which is known per se, often containing a conventional halogen additive.

The end of the bulb 2 remote from pinch 3 bears a dome which has a remainder of an exhaust tube in the center. The other end of the bulb 2 is hermetically sealed by a pinch 3. The substantially parallel outer surfaces of the single pinch 3, which are produced by the direct action of a pinching tool, are arranged centrally and symmetrically relative to the lamp axis. A plane in which the two ends of the luminous element 4 are located lies centrally in the interior of the pinch 3 so as to be parallel thereto.

The two limbs of the luminous element 4 are bent into the shape of a U, located in the extension of the above-mentioned plane and are arranged symmetrically relative to the lamp axis.

The luminous element 4, consisting of a material customary for halogen lamps such as, for example, tungsten has a luminous and continuously coiled section. Its two ends each have a non-coiled supply lead portion 6, which adjoins directly thereto. The supply leads 6 are partly sealed into the pinch 3 and are connected with electrical conduction to sealing foils 7 embedded in the pinch 3, thus serving for power supply. These two supply leads 6 are arranged parallel to one another in the pinch 3, the sealing foil 7 and a contact pin 8 following each supply lead in alignment, one behind the other. The two contact pins 8 are connected with electrical conduction to the respective sealing foils 7. They are partly

embedded in the pinch 3 and partly project from the pinch 3. The two supply leads 6, the two outer sealing foils 7, and the pin contacts 8 form the power supply system of the lamp.

According to Figs. 1a and 1b, the luminous element is held twice by the support wire 5 in that portion which is arranged transverse to the lamp axis. The coiled and bent support wire 5, which is made of a material customary for halogen lamps, such as molybdenum, is partly sealed and fixed in the pinch 3, substantially axially parallel between the two parts of the power supply system, and is connected with electrical conduction to a central sealing foil 13 embedded in the pinch 3. The center pin 11 is connected with electrical conduction to the central sealing foil 13, and is partly embedded in the pinch 3 and partly projects from the pinch 3. As can be seen in Fig. 1b, the bending line of the support wire 5 lies in a plane which is at right angles to the plane in which the limbs of the luminous element 4 are arranged. At its other end, in the region of the two support points, the support wire 5 is designed as a projecting hook whose opening faces the end of the bulb 2 remote from the pinch.

The metal inner part of the halogen incandescent lamp 1, including the luminous element 4, the center pin 11, the support wire 5, the supply leads 6, the sealing foils 7,13, and the pin contacts 8, constitutes a mechanically stable semi-finished product which was manufactured in one or more mounting steps before the final assembly of the halogen incandescent lamp 1, i.e. in particular the joining together of the glass part and the metal inner parts.

According to Figs. 2a and 2b, the luminous element 4 is held by two bent metal support wires 5. Support wires 5, preferably made of molybdenum, are designed and bent such that they do not interfere with the upright portions of luminous element 4. The support wires 5 are partly sealed and fixed in a glass pedestal comprising a capillary 9 and a bead 10. The capillary extends substantially in the pinch 3, whereas the bead 10 extends substantially in the inner space of bulb 2. The material of the pedestal may be quartz glass, but preferably is quartz transition glass, which has better wetting and softening characteristics when the support wires 5 are inserted, and matches the material of the bulb 2 when the pedestal is embedded therein. The support wires are inserted in the bead 10, and a center pin 11 is inserted in the capillary 9 when the pedestal is still hot and soft, whereafter the pedestal is cooled down, fixing the metal elements therein. Although the center pin 11 is similar to pin contacts 8, it is electrically isolated from the luminous element 4 and does not act as an electrical conductor. At its other end, in the region of the two support points, the support

wires 5 are designed as projecting hooks whose openings face the end of the bulb 2 remote from the pinch.

The substantially metal inner part of the halogen incandescent lamp 1, including the luminous element 4, the glass pedestal 9, 10, the center pin 11, the support wires 5, the supply leads 6, the sealing foils 7, and the pin contacts 8, comprises a mechanically stable semi-finished product which was manufactured in one or more mounting steps before the final assembly of the halogen incandescent lamp 1, i.e. in particular the joining together of the glass pinch/bulb portion and said substantially metal inner part.

Fig. 3 is a front elevation of an alternative embodiment of a halogen incandescent lamp, similar to the embodiment in Figs. 2a and 2b, wherein an extra support wire 5a, which is shorter than support wires 5, retains the luminous element 4. Support wire 5a is also partly sealed and fixed in bead 10 at its one end. At its other end, the support wire 5a is designed as a projecting hook whose opening faces the pinch end of the bulb 2. The central portion of luminous element 4 is thus held in a V-shape, the whole of luminous element 4 being given a W-shape thereby. Those skilled in the art will appreciate that many variations with regard to the shapes of luminous elements and the number and shapes of support wires 5, 5a are possible, including a V-shaped luminous element 4 supported by a single support wire 5, as well as complex three-dimensional shapes. This flexibility in shapes provides a wide range of possible lengths for the luminous element 4, and thus a wide variety of possible lamp powers.

Figs. 4a and 4b show the lamp according to Figs. 1a and 1b, but in order to insulate the center pin 11, which is electrically connected to the luminous element 4, the projecting position of the center pin 11, i.e. the portion which extends outside the pinch 3, is removed, and a bead 12 is applied on the pinch 3 in order to cover the opening through which the remaining portion of the center pin 11 is visible. Although bead 12 may be made of a ceramic material, the bead 12 is preferably made of a kind of glass which matches the properties in terms of coefficient of expansion of the quartz glass of which the pinch 3 is made, yet has a lower softening temperature. In particular, the bead is made of a copper-based glass, such as Corning™ batch 901ADY. This copper-based glass has a black color and can be heated by a flame or by focused IR radiation. It can be applied at a temperature of approximately 900 - 1000 °C.

CLAIMS:

1. A halogen incandescent lamp comprising a transparent sealed bulb (2), a gas filling comprising an inert gas and a halogen additive, a luminous element (4) which is attached to a current supply system (7, 8, 9) extending in a pinched portion (3) of the bulb, and a mount (5, 9, 10, 11, 12, 13) extending from at least adjacent the outside of the pinched portion (3) into the bulb (2) and comprising at least one metal support wire (5) which retains the luminous element (4) in the vicinity of the end of the bulb (2) remote from the pinched portion (3), characterized in that the mount (5, 9, 10, 11, 12, 13) comprises a non-conducting part (9, 10; 12) such that the outer end of the part (11; 12) of the mount (5, 9, 10, 11, 12, 13) at or near the outside of the pinched portion (3) and the support wire (5) are electrically insulated from each other.

2. A lamp according to claim 1, characterized in that the non-conducting part comprises a pedestal (9, 10) which is supported by the bulb (2) or the pinched portion (3) thereof, and that the at least one metal support wire (5) extends from the pedestal (9, 10).

3. A lamp according to claim 2, characterized in that the pedestal (9, 10) extends at least partly in the pinched portion (3)

4. A lamp according to claim 3, characterized in that the pedestal comprises a capillary (9) substantially extending in the pinched portion (3) and a bead (10) substantially extending inside the bulb (2).

5. A lamp according to any of the preceding claims 2 to 4, characterized in that the pedestal (9, 10) is substantially made of glass.

6. A lamp according to any of the preceding claims 2 to 5, characterized in that the bulb is made of a quartz glass and the pedestal is made of a quartz transition glass.

ABSTRACT:

A halogen incandescent lamp comprising a transparent sealed bulb (2), a gas filling comprising an inert gas and a halogen additive, a luminous element (4) which is attached to a current supply system (7, 8, 9) extending in a pinched portion (3) of the bulb, and a mount (5, 9, 10, 11, 12, 13) extending from at least adjacent the outside of the pinched portion (3) into the bulb (2) and comprising at least one metal support wire (5) which retains the luminous element (4) in the vicinity of the end of the bulb (2) remote from the pinched portion (3), wherein the mount (5, 9, 10, 11, 12, 13) comprises a non-conducting part (9, 10; 12) such that the outer end of the part (11; 12) of the mount (5, 9, 10, 11, 12, 13) at or near the outside of the pinched portion (3) and the support wire (5) are electrically insulated from each other.

Fig. 4a